

Financial Experience

of Large and Medium Size Manufacturing Firms, 1927-51

AMERICAN manufacturing industry like the economy generally has experienced high activity in the postwar years. Most industries have shared this experience, though some have experienced considerable fluctuations in the demand for products. High sales with relatively favorable financial conditions have contributed to a business climate which made possible a capital expansion program on a scale never before achieved.

This capital program involved the use of almost \$90 billion, of which more than half was spent on fixed capital (table 1). To help meet these requirements, manufacturing firms had

Table 1.—Postwar Sources and Uses of Funds for Manufacturing Corporations

	1948 through 1951	
	Billion dollars	Percent of total uses
Uses:		
Plant and equipment.....	49.6	55.1
Inventories.....	24.1	27.2
Receivables.....	9.4	10.6
Cash and U. S. Government securities.....	5.0	5.6
Other current assets.....	1.4	1.5
Total.....	89.5	100.0
Sources:		
Retained earnings ¹	38.3	42.8
Depreciation.....	17.7	19.8
Profits (taxes).....	6.1	6.8
Federal tax liabilities.....	9.4	10.6
Other current liabilities.....	2.1	2.4
Bank loans ²	4.1	4.6
Net new issues.....	8.7	9.7
Dividends.....	3.0	3.4
Total.....	89.4	97.4
Discrepancy:		
Unaccounted Sources.....	3.3	3.6

¹ Includes depletion.

² Includes mortgage loans by nonbank lenders.

Sources: U. S. Department of Commerce, Office of Business Economics.

\$38 billions of retained earnings, about three-fifths of total after-tax profits. In addition, about \$18 billion of funds were secured from depreciation allowances. These two sources accounted for almost two-thirds of the gross capital requirements of manufacturing corporations.

In comparison with this \$56 billion, about \$13 billion were raised through borrowing from banks or the issuance of securities.

The remainder of the capital requirements was met in large part from increases in Federal profits tax reserves and increases in trade credit.¹ The latter, it may be noted, for

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¹ The question is frequently raised how Federal tax liabilities become a source of funds. A tax reserve is set up on a company's books to take account of taxes accrued but not yet paid, and an appropriate amount of receipts from current operations is assigned to this reserve. Thus when these assigned receipts exceed tax payments (based on past operations) the company is provided with a temporary source of financing. In the reverse situation when tax liabilities are reduced, i. e., when tax payments exceed tax accruals, the reduction represents a use, rather than a source, of funds.

the most part reflected intercompany transactions involving a like amount of trade receivables.

Manufacturers as a whole were able to maintain a fairly favorable degree of liquidity throughout this period. Corporations generally had emerged from the war period in a highly liquid position. In the early reconversion period, these liquid resources served as an important supplement to other sources of funds required during the transition.

The ratio of liquid assets to sales reached its low point of around 11 percent at the end of 1948, rose to 13.6 percent in the moderate recession of 1949 and remained at that level in 1950. Manufacturers continued to add to their liquid resources in 1951, though the rise did not quite keep pace with the sales. By the end of the year, however, cash and governments were still equivalent to 12.3 percent of sales.

Summary of Present Survey

The analysis presented here attempts to throw light on whether these aggregative data reflect general phenomena affecting most businesses or whether they were results of divergent movements within the whole. For a sample of approximately 100 manufacturing corporations, of which one-third had assets of over \$100 million and two-thirds had assets of from \$5 to \$100 million, balance sheet and income statement information has been collected for the later twenties, for 1940, and for recent years.² While it would have been desirable to include in the sample data for the smaller firms—those with assets under \$5 million—this was not feasible in the present study.

It is believed, however, that the sample firms represent a cross section of large firms which mirror the general financial trends of firms which continued in operation throughout the period. Therefore, the firms covered are relatively well-established, and are generally in the more profitable groups. These firms should not be considered as representative of the younger and less tested concerns in the business population.

Financial position favorable

The over-all experience of the 100 large and medium size firms reveals a rather favorable financial picture. Sales were high and on a rising trend, except for a moderate dip in 1949. Before-tax profits followed a similar pattern with some tapering off evident in 1951. The ratio of profits to sales in 1951 was slightly below the postwar peak reached the preceding year, but well above other postwar years and even more substantially in excess of the prosperous prewar years.

On an after-tax basis, the picture was different. Through 1950 the profit-sales ratio was moderately below prewar,

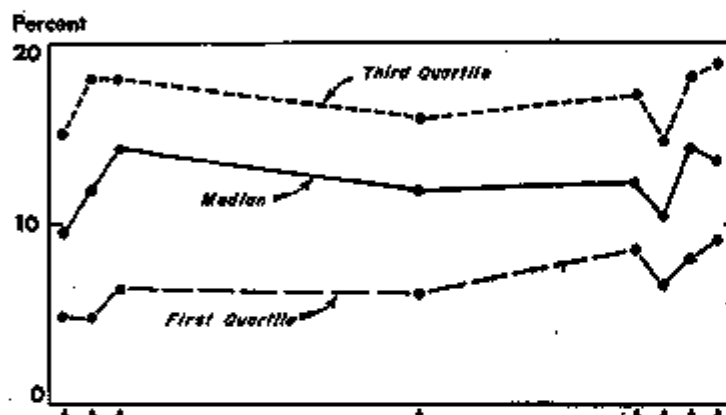
² For some ratios—generally those involving sales data—and in some years—mainly the later twenties—financial information was not complete, and hence it was necessary to use less than 100 firms in the sample. Tests made indicated that the omission of those firms with incomplete financial information did not seriously affect the results obtained.

mainly reflecting the higher Federal tax rates in the later period. The tax increase put in effect in 1951, however, cut into earnings to such a degree that in relation to sales, net profits were well below 1950 and the twenties.

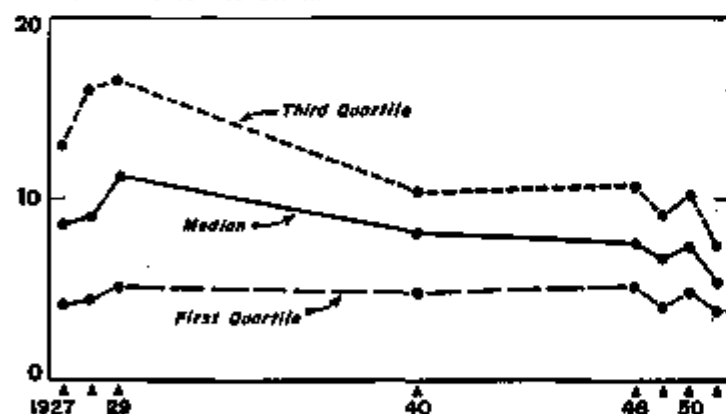
The corporations examined in this study, like business generally, entered the postwar period in an extremely liquid condition. Some of this liquidity was eliminated as activity increased and wartime accumulations were drawn on to help finance early postwar expansion programs. Throughout most of the postwar period, however, these

Profits as a Percent of Sales — Sample of Manufacturing Firms

Profit-sales ratios in recent years were somewhat higher than in later twenties on a before-tax basis



but were lower on an after-tax basis



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corporations were able to maintain an exceptionally liquid position not only because of the favorable profit situation but because of the availability of borrowed funds on relatively easy terms.

Liquidity was somewhat further reduced in 1951 and by the end of the year there was little or no evidence of the excess liquidity of the earlier postwar period. On the other hand, in historical perspective and with consideration paid to possible economies in use of liquid resources as activity expands, it did not appear that there was any general shortage of liquid resources available to the large- and medium-sized firms.

During the latter part of 1951 and early 1952 there were signs of stringencies in the amount of liquid resources available to some firms. These were apparently localized instances generally confined to smaller size firms. A survey recently completed by the Office of Business Economics suggested that in the closing months of 1952, the larger manufacturing concerns considered their working capital position satisfactory with no major problems then in sight in the financing of their capital programs given a continuation of high general business activity.

Significant intercompany differences

Intercompany comparison of prewar and postwar experience reveals certain interesting trends. While the over-all prewar-postwar changes just reviewed are broadly typical of individual firms, there were some significant differences. In the later twenties there was considerably greater disparity in the financial condition of the firms examined than existed either in 1940 or the postwar period. Both in terms of profits and the ownership of liquid resources, there was a tendency for the financial ratios of concerns in the more favorable positions during the twenties to show little change or, more typically, actually to decline. On the other hand, firms at the lower end of the scale more or less consistently improved their status. Thus the aggregate data tend in considerable degree to conceal significant differences in change of status of different firms.¹

Debt burden lower

A large segment of the sample shared in one important aspect of financial improvement over this period. Concerns which used borrowed funds experienced a considerable lightening of the burden of their indebtedness over this quarter century.

While the heavy borrowing to help finance the large postwar capital programs and the much higher sales volume raised the debt well above that of the twenties, the sharply reduced cost of borrowing made possible a holding down of interest payments to a range not significantly different from that which prevailed in the later twenties.

With the current absolute earnings far above that of the twenties, the relative "burden" of the debt is therefore currently far lighter than in those earlier years.

There was some indication that recent developments brought the liquidity of many firms in the sample down to a position comparable with or below prewar. On the other hand, many firms have achieved a more flexible financial position as a result of their improved debt status. Taken by and large, it would seem that economic developments over the quarter century have been in the direction of improving the over-all financial status of the firms covered.

Profitability of Sample Firms

The general trends of profits in relation to sales for the firms studied are shown in the accompanying chart and table 2. In deriving the chart, the firms were ranked in order of size of ratios of profits (before and after Federal income taxes) to sales, and then divided into four numerically equal groups. The lines shown in the chart represent

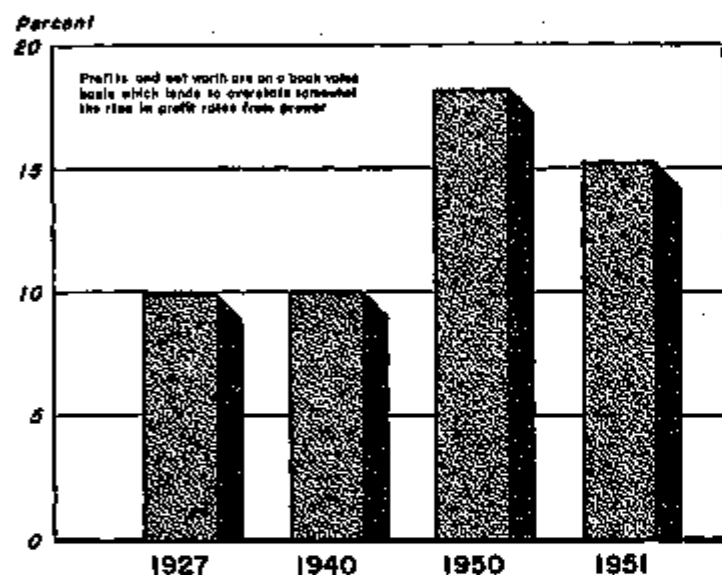
¹ To some extent this phenomenon may reflect the nature of the sample used. Since it was decided to deal only with firms which had been in existence throughout the period, it might be expected that the low ratio groups would of necessity have had to improve their financial condition to have remained in existence over this quarter of a century and that for firms which had exceptional financial experience in the earlier years, financial conditions would be less satisfactory at the present time. While this aspect of sample bias may have some bearing on the results derived, a few checks which could be made of the non-sample portion of manufacturing corporations suggests that the trends shown in the sample for the most part reflect actual economic developments, rather than the peculiarities of the sample.

the ratios of the firms on the dividing line between each of the four groups. If there were 99 firms used for these distributions, the lines shown in each panel would represent the ratios in each year for the twenty-fifth, fiftieth, and seventy-fifth firm.

The trend of the ratio of profits to sales differed over the 1927-51 period on a before- and after-tax basis. The trend of the former was generally upward for full-employment periods, though for the firms with relatively higher profits margin in the twenties the reverse is true. The sharp rise in Federal profits taxes over this period is clearly reflected in the substantially reduced profit-sales rate on an after-tax basis. Only for the lowest rate group has the after-tax ratio been relatively well-maintained.

Profits After Taxes as a Percent of Book Net Worth -

Sample of Manufacturing Firms



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There was a considerable narrowing of the dispersion in profit-sales ratios over this period. While this is apparent on both a before- and after-tax basis, the lower panel of the chart clearly indicates the narrowing was especially pronounced for profits after taxes. Whereas the spread between the upper and lower lines in the bottom panel amounted to about 10 percentage points in the later twenties, the gap had narrowed to slightly over 6 percentage points in 1951. It is equally clear the "narrowing" process reflected a reduction in the higher ratios, since, as just noted, there was little change in ratios for the lowest firms.

From table 2 it may be seen that whereas slightly more than half of the firms included had profits before taxes equal to less than 10 percent of sales in the earlier period, by 1951 less than one-third of the firms were in this group. At the other extreme one-fifth of the firms in 1951 showed ratios of twenty percent or more compared with from one-eighth to one-sixth of the firms in the 1927-29 period.

The situation was practically reversed when after-tax profits are examined. Over four out of five firms in 1951 were in the less than 10 percent class compared with approximately one out of two in the later twenties, and whereas one-fifth of the firms studied had ratios of profits to sales of 15 percent or higher in the earlier period there was only one such firm in 1951.

The data shown in the first chart and table 2 are based on separate rankings of the firms in each of the years shown. Perhaps a somewhat clearer picture of the trends may be seen if the firms in the different ratio groups are retained in their respective groups throughout the period. For this purpose the firms were classified by size of their profits-sales ratios in 1927. Generally speaking those firms which had relatively high ratios of profits before taxes to sales in the twenties showed somewhat lower ratios by 1940 while the lower ratio groups advanced markedly. Thus the relatively small increase in the over-all average from the twenties to 1940 reflected the divergent trends for the "low" and "high" ratio firms.

Since 1940 the upward trend has been general and by 1951 profit-sales ratios before taxes were for the most part as high or higher than in the later twenties. However, the over-all increase, amounting to about one-third for the whole period, was primarily accounted for by the lower ratio firms. Firms which in the later twenties had ratios of less than 10 percent underwent a more than ninefold profit expansion, compared with a less than fivefold sales increase. The expansion of profits relative to sales was not quite as striking in the 10-15 percent range. For firms with profit-sales ratios of more than 15 percent at the start of the period, profits and sales appeared to have kept pace over the span of years.

There was one notable deviation from the already noted generally downward trend on an after-tax basis. This was in the lower ratio group, which taken in the aggregate, achieved an increase in the ratio of profits after taxes to sales from about 2 percent in 1927 to 2.8 percent in 1951.

Table 2.—Profits Related to Sales—Frequency Distribution of Sample Firms in Manufacturing—Selected Years 1927-51

Profits as a percent of sales	Percent of Firms in Sample							
	1927	1929	1929	1940	1948	1949	1950	1951
Profits before taxes								
Less than 10.....	52.9	45.4	40.6	41.8	25.6	47.6	26.3	39.3
10-20.....	28.3	28.3	42.0	47.0	50.5	30.3	40.8	48.5
20 and over.....	11.8	10.3	16.4	11.2	13.8	12.0	18.2	21.2
ALL.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Profits after taxes								
Less than 10.....	50.5	52.8	45.0	72.0	71.6	80.4	73.6	82.7
10-15.....	20.9	10.9	24.4	17.8	22.8	10.8	21.6	15.5
15 and over.....	10.8	20.3	21.7	11.9	7.6	8.8	4.0	1.0
ALL.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: U. S. Department of Commerce, Office of Business Economics.

All other groups showed declines in this ratio, with the relatively largest reductions appearing in the higher rate groups.

Profitability and size

The varying profit experience of the firms sampled does not appear to have been closely related to size of business. Between 1927 and 1940 when the profits-sales ratio (before taxes) increased slightly for all firms examined, there was a moderate 10-percent increase shown for the largest firms (those with total assets over \$100 million in 1927) and a more sizable—35 percent—rise in the ratio for the smaller size group (with assets under \$10 million in the earlier period). The bulk of the firms were in the intermediate size range, and their profits were actually somewhat lower while sales were slightly higher in 1940 as compared with 1927.

Since 1940 all asset size groups underwent substantial increases in their profits-sales ratio (before taxes) with the

greatest relative gain accruing to the intermediate size firms (10-100 million dollars of assets). The ratios for the largest and smallest size groups rose in about the same orders of magnitude.

Perhaps the most striking aspect of the change in operating experience over this period of almost 25 years has been the sharp increase in Federal taxes. The data for the sample relating to the ratio of profits before taxes to sales suggest that the firms were in a position to pass part of these taxes on to their customers. On the other hand, the decline in the after-tax ratio is indicative of the fact that part of the tax increase has not been so "passed on." It might be observed incidentally that during the "high tax" years of the postwar period, the general inflationary pressures provided an economic setting favorable for passing taxes on in the sales price.

Profits related to stockholders' equity

The chart on page 9 clearly indicates that, although profits after taxes rose much less sharply than sales over the period studied, the increase in such earnings was much greater than the rise in the book value of stockholder's equity. For the sample as a whole, the profit rate was about 10 percent in 1927 and 1940, but by 1950 it has risen to over 18 percent. The continued expansion of equity capital in the business in 1951 coupled with the reduction in after-tax earnings resulted in a decline in the ratio to 15 percent at the end of the year.

Table 3.—Profits After Taxes Related to Net Worth—Frequency Distribution of Sample Firms in Manufacturing—Selected Years 1927-51

Ratio of profits after taxes to net worth	Percent of firms in sample							
	1927	1928	1929	1940	1948	1949	1950	1951
Less than 10 percent.....	50.4	48.1	44.0	54.5	11.1	32.7	22.4	33.0
10-15 percent.....	24.8	26.4	28.0	14.0	33.7	37.4	30.8	33.0
15-20 percent.....	8.9	15.1	16.9	13.1	22.5	24.6	23.4	23.3
20 percent and over.....	15.9	10.4	11.2	8.4	32.7	9.3	23.4	10.7
All.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: U. S. Department of Commerce, Office of Business Economics.

A word of caution should be noted in interpreting these data, which are on a book-value basis. First, in the postwar period, a sizable amount of profits reflected nonrecurrent inventory gains arising out of the inflationary price situation which prevailed during this period. This was particularly true in the 1946-48 and 1950 periods. Inventory gains in 1951 were much less important and probably do not greatly distort the comparison with the later twenties or 1940 when inventory profits were not very large.

Second, profits tend to be overstated by reason of the fact that depreciation policy is based on original rather than replacement cost of plant and equipment. Since the price level has been strongly upward since 1940, use of replacement cost would serve to lower book value profits.

Third, in view of the generally higher price level in recent years, the usual accounting practices tend to result in an understatement of stockholders' equity in the current as compared with earlier periods.

There is no easy way to make adjustments for these three considerations, but rough calculations suggest such corrections would serve to moderate greatly but not to eliminate the gains shown in the chart for the postwar years through 1950. Applied to 1951 data, however, these adjustments

would serve to reduce the ratio of profits to equity to about the prewar level.

Company differences in profit experience

Various frequency distributions were developed to bring out the differences among the firms in the relation of their profits to equity (table 3). For the most part the results follow closely the pattern discussed above in connection with the profits-sales ratios, and hence need not be presented in detail here. The process of "convergence" or narrowing of the spread of profits rates was clearly apparent by 1940 with the "lower" profit rate groups having increased their rate of return, approximately counterbalancing the drop in rates evident for the "higher" rate groups.

The postwar rate of return on equity was substantially higher than in 1940 for all groups of firms arrayed by size of the rate of profit to equity. By 1951, however, the higher ratio groups indicated ratios somewhat under those of the later twenties. Thus the 50-percent increase in the over-all rate of return for the firms was accounted for by firms which had relatively low or intermediate rates in the twenties.

Liquidity of Sample Firms

In addition to an examination of the profitability of the manufacturing firms in our sample, analysis was also directed to some of the important indexes of liquidity, such as the relation of liquid assets to sales, liquid assets to current liabilities, and current assets to current liabilities. The general pattern revealed by such data indicated that the postwar liquidity position of most of the firms examined compared favorably with and was not much different from the immediate prewar period or the years of the late twenties. By the end of 1951, however, many firms indicated some reduction in their liquid status as compared with prewar. A related measure, concerned with the effect of changes in debt and interest payments on the financial position of the firms and discussed in a later section, very decidedly indicated improved flexibility in the firms' status over the period.

Liquid assets to sales

The accompanying chart and table 4 present summary data on the relation of liquid assets to sales for the companies

Table 4.—Liquid Assets Related to Sales—Frequency Distribution of Sample Firms in Manufacturing—Selected Years 1927-51

Ratio of liquid assets to sales	Percent of firms in sample							
	1927	1928	1929	1940	1948	1949	1950	1951
Less than 5 percent.....	30.8	23.6	32.1	23.0	23.5	16.7	13.7	23.6
5-10 percent.....	30.8	34.7	22.2	10.0	28.4	11.0	10.0	15.4
10-25 percent.....	24.7	30.3	33.3	42.0	43.2	56.0	62.0	47.9
25 percent and over.....	13.5	11.4	12.4	10.0	5.0	8.8	12.7	16.2
All.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* Liquid assets generally include cash and Government securities. In some cases, "other marketable securities" are included when not shown separately on the balance sheet.

Source: U. S. Department of Commerce, Office of Business Economics.

examined. As may be seen from the taller bar on the chart, the over-all ratios of cash and marketable securities to sales during the postwar period were higher than in the 1927-29 period. In other words, the accumulation of liquid assets by these firms proceeded at a somewhat more rapid rate than the sixfold expansion of sales over this period. In the

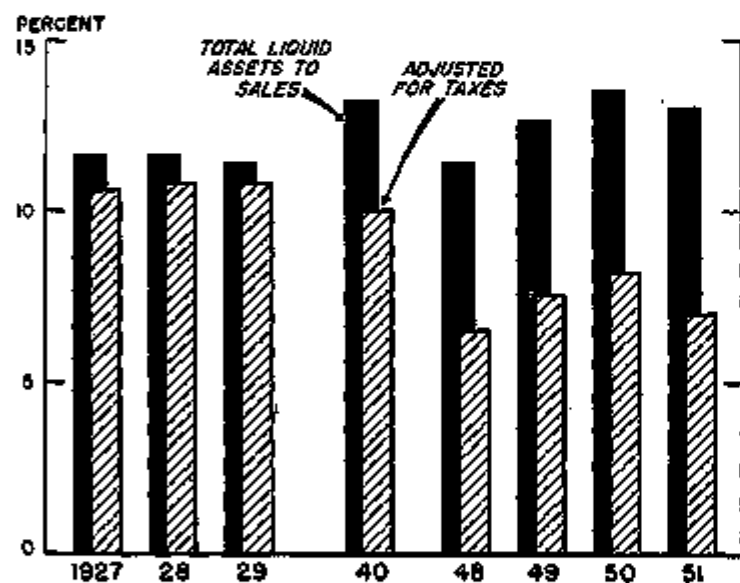
light of the much higher level of activity and sales at the present time, it would appear that liquid asset requirements need not have risen as rapidly. The even sharper rise in Federal profits taxes over this period undoubtedly led many firms to hold a somewhat larger proportion of this current liability in liquid form than has been the case for other current liabilities.

In the shorter bars shown in the chart, these tax liabilities have been subtracted from both liquid assets and sales before computing the liquidity ratios. Such a procedure in all probability overstates the adjustment necessary, since it implies that tax liabilities are offset on the asset side of the companies' books on a dollar-for-dollar basis. Nevertheless it is noteworthy that for the 1948-50 period the adjusted ratios were only moderately below those of the later twenties,

Liquid Assets as a Percent of Sales —

Sample of Manufacturing Firms

Liquid Assets have followed rather closely the trend of sales. Adjusted for the sharp rise in Federal taxes, the ratio of liquid assets to sales is currently below prewar



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especially 1929. The drop in the "adjusted" ratio in 1951 was a consequence of the sharp increase in Federal tax liabilities in that year—a development which has followed similar sharp tax increases in the past.

Available evidence suggests some improvement in liquidity over the past 12 months. In general, the over-all liquidity ratios suggest that the liquidity position of these concerns taken as a group is not appreciably different from comparable periods of business activity in the past, though any excess liquidity of the earlier postwar period had disappeared by the later part of 1952.

Company differences in liquidity

The considerable dispersion in the twenties noted in the profit experience of the firms studied and the narrowing of the

spread in the postwar period are even more strikingly in evidence in the liquidity ratios. Table 6 presents the percent distribution of firms based on their liquid assets-sales ratios. Whereas three-fifths of the companies studied had ratios of less than 10 percent in 1927, the number had declined about two-fifths by 1951. At the other end of the scale, the firms with liquid assets-sales ratios of better than 25 percent were reduced from about 14 percent in 1927 to 10 percent by 1951.

The converging tendency had been accomplished in large part by 1940, and the process of "bunching" proceeded at a much slower pace thereafter. The following calculations of average liquid assets-sales ratios summarize the shift which occurred over the period as a whole (firms in 1951 are retained in the ratio interval into which they fell in 1927):

Liquidity interval:	Percent	
	1927	1951
Less than 10 percent.....	3.0	6.5
10-20 percent.....	13.3	16.6
20 percent and over.....	20.5	13.0

The lower liquidity group of firms (those with liquid assets in 1927 representing less than 10 percent of sales) improved their position very substantially; the average ratio for the group amounting to 6.5 percent in 1951, almost double the ratio in 1927. The intermediate group underwent a more moderate relative gain. At the other extreme, those with liquidity ratios of over 20 percent in 1927 actually reduced the liquid assets relative to sales over this period.

These data suggest that the liquidity position of the firms in the earlier period may have had some importance in shaping the subsequent pattern of change. One hypothesis might be that in the later twenties the liquid resources of business were unevenly distributed, with some firms in an extremely liquid position and others relatively short of cash and near-cash resources. In the tremendous expansion of activity which had occurred by the postwar period, the more liquid firms found it possible to carry on the greater volume of business with relatively smaller cash resources, while the generally prosperous conditions also permitted the less liquid firms to achieve a more satisfactory status.

It is interesting to note that the smaller firms had the relatively lower ratios in 1927, but that these firms experienced somewhat larger absolute and relative gains over this interval.⁴

Other liquidity measures

The other measures of liquidity calculated for the sample of manufacturing firms showed generally speaking the same pattern of liquidity changes as those just discussed. The ratio of current assets to current liabilities and the ratio of liquid assets to current liabilities, both adjusted for the greatly increased Federal taxes, show moderate declines over the quarter century. The over-all declines are almost entirely due to reductions in the ratio of those firms which were most liquid in the earlier period.

Equity, Debt, and Related Changes

With the large fixed capital expansion program under way since the end of the war, private industry required long-term financing on a scale never before approached. While the bulk of this financing has been obtained from internal

⁴ Similar data for all manufacturing firms over this time period are at present not sufficiently refined to compare the experience of our sample with that of the universe, but the rough measures now available are consistent with the picture shown above. Subsampling our sample data from these rough universe estimates suggested that the nonsampled group, consisting largely of the smaller firms, had liquidity ratios in 1927 more nearly comparable to the smaller firm group shown above, and experienced a relatively larger gain than shown for the intermediate and larger sized firms in our sample.

sources, principally through plowing back of earnings and the use of depreciation allowances, substantial sums were raised in the capital markets in the form of stock issues and bond sales, with the latter accounting for the bulk of such funds. In view of this large inflow of funds, both from internal and external sources, it is interesting to make a few prewar-postwar comparisons of the financial structure and related factors for the sample of manufacturing firms studied.

Long-term debt versus equity

Roughly two out of five of the firms in the sample had no long-term debt at the end of 1951—a proportion which varied but slightly from the situation which prevailed during the prewar period. Another one-tenth of the firms had invested capital (long-term debt plus equity) which was at least 90 percent in the form of equity—again a proportion which showed little variation over the years.

The major change which occurred in the invested capital structure was a somewhat greater emphasis on equity capital by those firms which were relatively heavy users of debt capital in the twenties. Firms in which debt constituted from 30 to 60 percent of invested capital accounted for about one-sixth of the sample firms in the late twenties but only 8 percent of the sample in 1951. There was a corresponding increase in the proportion of firms in which debt constituted a relatively moderate portion of invested capital (from 10 to 30 percent). This latter group of firms represented almost one-fourth of the sample in 1927 and approximately two-fifths of the sample in 1951. It is noteworthy that this comparison actually minimizes the trend to equity capital over this period since in the inflationary developments of the postwar period, the book value of equity tends to be understated relative to debt.

The interest "burden"

Actually the amount of long-term debt of the corporations in the sample had been reduced substantially during the thirties and the war period. But in the face of the huge postwar requirements, the volume of indebtedness was increased greatly in recent years and by the end of 1951, outstanding long-term debt was about 50 percent larger than at the start of the period covered in the study.

Despite this larger volume of indebtedness, interest requirements were by 1951 only slightly above payments in the twenties. This is of course understandable in the light of a strongly downward trend of interest rates over most of this period, which made possible not only new debt financing on far more favorable terms than in the twenties but also the refinancing at lower rates of a substantial volume of indebtedness incurred in the earlier period.⁴ When this relatively favorable interest-debt experience is placed against the background of the higher profits generally prevailing in the postwar period, it can be seen that these developments make for one of the most striking financial changes in the past quarter century.

Interest paid by corporations in the sample of manufacturing firms constituted but 1.4 percent of profits before taxes and interest in 1951, compared with 4.3 percent in

1940 and an average of 6.5 percent in the later twenties. With somewhat different emphasis, the significant change in the debt picture can be pointed up by noting that for our sample firms, earnings available for servicing the debt amounted to 2.4 times the amount of debt outstanding in 1951. This compares with ratios of 0.7 in 1927, 0.9 in 1928, and 1.1 in 1929. This picture would not be significantly altered if allowance is made for those firms which did not use long-term debt throughout the period studied.

The accompanying chart and table 5 indicate in vivid fashion how the change in the interest-debt pattern affected the different firms in the sample studied. The chart is based on a frequency distribution of the firms grouped according to the proportion that interest payments were of earnings available for such payments (i.e., earnings before taxes and interest). The scale on the left of the chart indicates the percent distribution of the number of firms while the class interval of the ratio of interest to earnings is shown by the different shaded areas in each bar.

In 1927 almost one-fourth of the firms paid out interest which represented 20 percent or more of their earnings. In

Table 5.—Interest Paid Related to Profits Before Taxes and Interest—Frequency Distribution of Sample Firms in Manufacturing—Selected Years 1927-51

Interest paid to profits before taxes plus interest paid	Percent of firms in sample						
	1927	1928	1929	1940	1948	1949	1951
Zero percent.....	38.1	37.4	40.2	38.0	34.6	33.0	31.7
0.1-10 percent.....	21.0	28.1	29.9	30.0	39.8	50.1	62.5
10-20 percent.....	16.7	15.8	12.1	18.0	3.7	6.6	3.8
20 percent and over.....	24.5	18.7	17.8	7.5	1.0	3.7	1.9
All.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: U. S. Department of Commerce, Office of Business Economics.

recent years there has been only a scattering of firms in this group. There was a similarly sharp drop in the number of firms for which interest charges represented from 10 to 20 percent of available earnings. At the other extreme, there was a reverse movement. Firms for which interest payments constituted less than 10 percent of earnings made up three-fifths of the sample in 1927, but approximately 95 percent in 1951, and of the latter roughly eight out of nine paid no interest or interest which amounted to less than 5 percent of earnings.

It may be noted, however, that there were somewhat fewer firms in 1951 than in the twenties which had no interest payments, and hence there was apparently somewhat more frequent use of relatively small amounts of debts.

It would appear, when account is taken of the rigidity which the incurrence of debts adds to the financial structure, that the reduced incidence of indebtedness in the postwar period has materially added to the financial flexibility and in a real sense to the liquidity of the corporations studied.

Terms of Financing

As noted earlier the bulk of outside financing obtained by manufacturers generally took the form of debt issues

⁴ Interest payments as used in this section actually include interest paid on bank loans as well as on longer term indebtedness, but the picture would be substantially unchanged if allowance could be made for this fact.

(table 1). Of the total volume of external funds raised by all manufacturing corporations in the postwar period, three-quarters were borrowed, with 45 percent being in the form of long-term issues.

There are three aspects of the preponderance of debt in outside financing which call for special comment. In the first place, a substantial amount of total outside funds raised flowed to the petroleum industry. Large firms in this industry have generally been inclined to make use of debt financing to a considerable degree in their expansion programs. Although equity financing appears to have been of greater relative importance in other manufacturing fields than the over-all figures presented above would suggest, debt financing still constituted the predominant share of external financing for most of the firms studied.

It would be interesting to compare this postwar financing with that of prewar financing. Unfortunately neither for manufacturing in general nor for our sample of firms has it been possible up to this time to assay with any satisfactory degree of reliability the relative importance of bond and stock financing in the prewar period. Examination of the terms of

rates. The long-term rate which was not uncommonly at or above 8 percent in the twenties was by the early postwar period cut almost in half, and though there was some firming in this rate in the later postwar period, interest rates in 1951 were still well below those of the late twenties.

In contrast, it appears that the cost of outside equity capital increased substantially from the late twenties. No direct measures of this cost are available, but the computed dividend yield and the ratio of earnings to stock prices indicate an upward movement over this period. For example, for the firms studied in the sample, the median dividend yield—the percent that dividends per share were of the stock price—ranged 2.8 to 4.3 percent in the 1927–29 period, compared with ratios of from 6.3 to 7.8 percent in the later postwar period. A similar picture is revealed in the earnings-price ratio which averaged around 7 percent in 1927 and 1928, compared with a ratio almost double that figure in 1951.

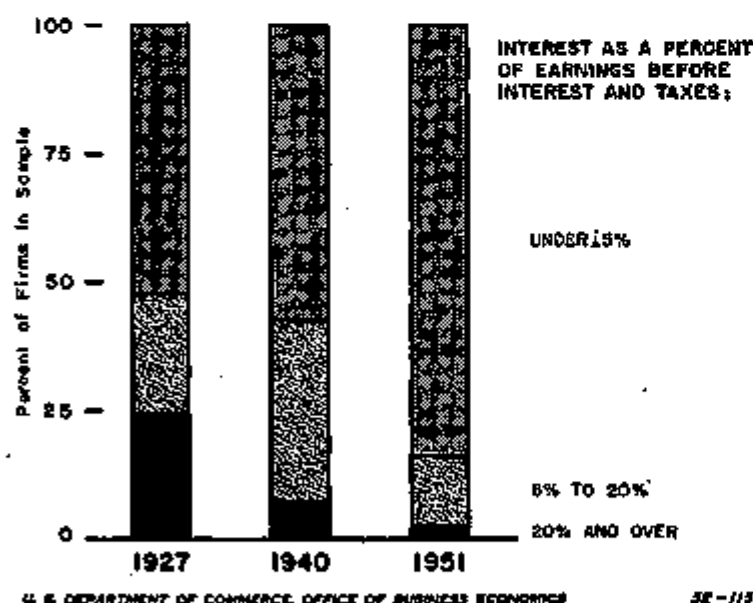
Table 6.—Dividends Paid Related to Profits After Taxes—Frequency Distribution of Sample Firms in Manufacturing—Selected Years 1927–51

Ratio of dividends to profit after taxes	Percent of number of firms in sample							
	1927	1928	1929	1940	1948	1949	1950	1951
Less than 20 percent.....	23.1	10.0	15.7	23.4	14.0	10.3	10.3	0.5
20-40 percent.....	0.0	16.0	14.0	8.4	42.0	28.0	37.4	20.0
40-60 percent.....	10.3	20.0	31.8	27.1	28.0	30.8	34.6	41.0
60-80 percent.....	23.1	12.1	16.8	22.4	10.3	14.0	10.3	21.0
80-100 percent.....	14.4	13.1	16.0	15.9	0.0	3.7	4.6	5.7
100 percent and over.....	13.8	10.3	9.7	2.9	2.8	3.7	2.8	1.0
All.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: U. S. Department of Commerce, Office of Business Economics.

Interest Payments Related to Earnings

Proportion of firms with relatively high interest payments has dropped substantially since the twenties



finance as well as other indirect evidence suggests that over the span of years studied there has been, insofar as outside financing is concerned, some shift to debt financing.

The decided downward drift in interest rates since the late twenties is clearly evident in both long-term and short-term

It should be stressed that the choice of the period 1927–29 undoubtedly tends to overstate substantially the rise in terms of financing which occurred from other periods of the twenties, since in the 1927–29 period the stock market was unusually active and buoyant. If the comparison had been made with the middle twenties, available information suggests that the current earnings-price ratios would not be too far out of line with that period, although dividend yields were higher in recent years. There seems little doubt, however, that when account is taken of the sharply reduced cost of borrowed funds, the terms of financing currently are more favorable to relatively greater use of senior funds.

Even though this is the case, it will be recalled that equity capital has been available in volume to manufacturing corporations. As pointed out above in the invested capital structure of the firms studied, equity capital is currently of greater importance than in the prewar period. This has been in part the result of conservative dividend policies pursued by management in the postwar period. The range of the ratio of dividends to net earnings for the middle firm in the group under examination went from 38 to 50 percent from 1948 to 1951. This compares with a range of from 50 to 60 percent in the 1927–29 period, and a ratio of 50 percent in 1940. Currently, however, with dividends well-maintained and profits leveled off, the ratio of dividends to earnings—some-what more than 50 percent—for the typical firm among larger companies is about in line with that of the later twenties.